

25 January 2001

## CRUISE RESULTS

NOAA FRV ALBATROSS IV  
Cruise No. AL 00-04 (Parts I-III)  
Sea Scallop Survey

## CRUISE PERIOD AND AREA

The cruise period was from 6 July to 18 August 2000 and was divided into three parts. Part I was during 6-21 July; Part II from 24 July-4 August; Part III from 11-18 August. The area surveyed was from North Carolina to Georges Bank. Sampling depths ranged from 28 to 110 meters (15 to 60 fathoms). Approximate station locations are shown in Figures 1 and 2.

## OBJECTIVES

The objectives of the survey were to: (1) determine the distribution and relative abundance of the sea scallop, Placopecten magellanicus and Iceland scallop, Chlamys islandica; (2) collect biological samples and data relative to assessment needs; (3) monitor hydrographic and meteorological conditions; (4) make biological collections for interested scientists at various institutions and laboratories; (5) test fishing angle of dredge using the inclinometer; and (6) test scallop dredge operations with and without rock chains.

## METHODS

Operations and gear for cruise AL 00-04, Parts I, II, and III conformed with the Cruise Instructions for the Sea Scallop Survey, dated 24 May and ADDENDUM NUMBER 1 dated 30 June, ADDENDUM NUMBER 2, dated 24 July, ADDENDUM NUMBER 3, dated 7 August with the following exceptions: Part I made a port call to Norfolk, Virginia from 11 -18 July due to mechanical problems and departed on 19 July. Due to this loss sea time, a third leg was added to the survey. Part III, was originally scheduled to leave 7 August, but left on 11 August, also due to mechanical problems.

Pre-selected stations were sampled using a standard 2.44 meter (8 foot) wide New Bedford type scallop dredge rigged with 5.1 cm (2 inch) diameter rings and lined with a 3.8 cm (1 ½ inch) polypropylene stretched mesh liner. Tow duration was 15 minutes; tow speed was 3.8 knots and the dredge was fished using a 3:1 wire out to depth scope. A recording inclinometer was mounted on

the dredge to collect bottom contact/time data. Tow distance was recorded using differential GPS.

A paired dredge comparison was employed to detect differences in scallop catches, in both numbers and length frequencies, between a rock chain dredge and a standard dredge. The rock chain dredge was a standard NMFS dredge rigged with rock chains based on industry standards. The dredge tows were conducted in a traditional "A,B,B,A" sampling scheme.

The entire catch was sorted at each standard station into biological and trash components. Live whole and clapper shells of both sea and Iceland scallops were measured in five-millimeter length intervals. Atlantic cod, haddock, yellowtail flounder and goosefish caught incidentally in the dredge were measured to the nearest centimeter. Weights and total numbers were recorded for cancer crabs and starfish to determine predator/prey relationships. All other fish and invertebrates were recorded by total number caught. Trash portions were estimated by volume and discarded.

Surface temperatures were measured using the hull-mounted temperature sensor, at a depth of three meters. Temperature and conductivity profiles were made (approximately every third station) using a conductivity, temperature, depth instrument (CTD). A bottom salinity sample was obtained twice a day to calibrate the CTD.

Eastern daylight savings time was maintained during the cruise.

## RESULTS

There was a total of five hundred and ten stations occupied during the cruise with 100, 251, and 159 dredge hauls made on Parts I, II, and III respectively. During the survey, there was a total of 41 flips. There were 32 scallop dredge comparison tows, (16 pairs) conducted at the end of the standard scallop survey, (Leg III, 11-18 August).

Bottom temperatures were collected at 107 stations (of which 104 were successful) using the CTD system. Bottom water samples for CTD calibration were taken on 28 stations.

Dredge logs were hand processed while at sea. Table 1 lists the major samples collected for various studies.

## DISPOSITION OF DATA

Catch data and hydrographic data will be analyzed at the NEFSC Laboratory and entered into the Survey Data Base System at Woods Hole, Massachusetts. The various collections were forwarded to

researchers listed in Table 1.

#### SCIENTIFIC PERSONNEL

##### National Marine Fisheries Service, NEFSC, Woods Hole, MA

Chad Keith, Chief Scientist, Part I\*

Paul Rago, Chief Scientist, Part II\*\*

Victor Nordahl, Chief Scientist, Part III\*\*\*

Teyra Barrow, II

John Boreman, II

Jon Brodziak, III

Wendy Davis, I, III

Victoria Dreier, I

John Fearing, III

Devorah Hart, I

Barbara Lewis, II

Paul Nitschke, III

Elizabeth O'Neill, I

Nina Shepherd, II

Alya Singh, I

Maureen Taylor, II

James Weinberg, III

Mary Woodruff, I

##### National Marine Fisheries Service, Highlands, NJ

Ashok Deshpande, I

##### National Marine Fisheries Service, Narragansett, RI

Bruce Burns, II

##### NOAA NGS, Norfolk, VA

Diana Ocampo, II

##### Division of Marine Fisheries, Pocasset, MA

Michelle Thompson, III

##### University of Massachusetts, Amherst, MA

Christopher Grogan, III

##### Contractors, PTSI, Woods Hole, MA

Dana Belden, III

Heather Sagar, I

Rebecca Scagnoli, II

Scientific personnel (continued)

##### Teacher-at-Sea Program

Christine Kirch, II

Carolyn Stultz, I

Joan Tajchman, II

West Warwick, RI

Clinton, TN

Northfield, NJ

Volunteers

Lawrence Brady, III	Old Bridge, NJ
Paul Kanive, II	Bristol, RI
Melissa Krisak, I (6-18 July)	Trumbull, CT
Amanda Magliozi, III	Falmouth, MA
Sarah McGrath, III	Falmouth, MA
Melanie Moore, I	Chicago, IL
Avis Sosa, I, II	Pittsfield, MA

- \* Part I (6-21 July)
- \*\* Part II (24 July-4 August)
- \*\*\* Part III (11-18 August)

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For further information contact: Thomas Azarovitz, National Marine Fisheries Service, Northeast Fisheries Science Center, Woods Hole, MA 02543-1097. Telephone: (508) 495-2283; FAX: (508) 495-2258; email: *Tom.Azarovitz@noaa.gov*.

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Table 1. Special samples obtained for various investigators on FRV ALBATROSS IV Cruise 00-04, (I-III), Scallop Survey, during 6 July-18 August, 2000.

Investigation & Affiliation	Samples Saved	Approximate Number
George Bolz, NMFS, NEFSC, Woods Hole, MA	Goosefish vertebrae Sea scallop valves Whole goosefish Tagged scallops	442 samples 1275 samples 88 indiv. 1 indiv.
Scott Gallagher, WHOI Woods Hole, MA	Whole sea scallops	145 samples
Devorah Hart, NMFS NEFSC, Woods Hole, MA	Astropecten Asterias Cancer crabs	100+ samples 145+ samples 175+ samples
Karsten Hartel, Museum of Comparative Zoology Cambridge, MA	Whole goosefish	3 indiv.
Jason Link, NMFS, NEFSC, Woods Hole, MA	Goosefish stomach contents	442 indiv.
Avis Sosa Pittsfield, MA	Digital photo collection	55 photos
Kathy Sosebee, NMFS, NEFSC, Woods Hole, MA	Barndoor skate Clearence skate Little skate Rosette skate Smooth skate Thorny skate Winter skate	18 indiv. 33 indiv. 507 indiv. 9 indiv. 14 indiv. 5 indiv. 188 indiv.
Michael Vecchinone, NMFS NEFSC, Nat'l Systematics Lab Washington, DC	Cephalopods	1 indiv.